



Reserve Engineers Lead the Way for Urban Operation Construction at NTC

By Master Sergeant Tony A. Knecht

Reserve engineer units are helping make changes to the training facilities at the National Training Center (NTC), Fort Irwin, California. Operation Sand Castle, a coordinated effort between the NTC G-3 office and the United States Army Reserve Command (USARC), completed its second year of construction efforts, and Reserve participation is expected for another eight years. The mission is to provide upgrades to NTC training facilities and existing urban operation cities and to complete a new urban operation city—known as Tiefert City—consisting of 300 to 500 buildings. The new city

will create a premiere training area for an entire brigade combat team (BCT).

Operation Sand Castle

The 412th Engineer Command is the exercise executive agent responsible for the planning, logistics, and training of all participating units. The Exercise Support Command, the Reserve liaison office at Fort Irwin, provides assistance to the 412th. Operation Sand Castle provides Reserve engineer Soldiers the opportunity to train on many technical and tactical skills in a desert environment.

First Year

Many improvements were made to existing training facilities downrange—also known as the “box”—during Operation Sand Castle 2005. The exercise was conducted over two rotations, with the 411th Engineer Brigade (Combat) providing command and control for participating units. The 389th Engineer Battalion (Combat) (Heavy) served as task force commander during the first rotation, and the 365th Engineer Battalion (Combat) (Heavy) and the 854th Engineer Battalion (Combat) (Heavy) shared responsibilities during the second rotation. Other units participating included the 319th Engineer Company, the 770th Engineer Company, the 952d Engineer Company (Combat Support Equipment), the 328th Engineer Company,



Aerial view of Tiefert City

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the 425th Engineer Company, and the 673d Facility Engineer Detachment.

Units installed siding on the Langford Well complex and built windows, doors, and new structures in five different urban operation cities, making them look more like structures in-theater. Horizontal construction included creating a bypass road around Langford Lake—vastly improving the main supply route and enabling easier transportation of equipment, supplies, and personnel to forward operating bases (FOBs)—and constructing roads and drainage around Eastland City. Improvements to the old quarry site located on Tiefort Mountain included tripling its size, building a wooden headwall structure, and setting up a rock-crushing plant that produced all of the gravel for Operation Sand Castle 2006. Improvements were not limited to the “box”; plumbing services were provided to some of the facilities in the cantonment area, improving quality of life in those buildings.

Second Year

Operation Sand Castle 2006 broke ground on the beginning stages of the new Tiefort City site. The 372d Engineer Group (Combat) was responsible for command and control over participating units. The 673d, working with the United States Army Corps of Engineers®, provided construction designs and data. The 733d Facility Engineer Detachment began working on the project designs for fiscal year 2007. The Construction Management Section, 411th Engineer Brigade, provided quality assurance during all construction phases. The Soldiers lived in FOB Santa Fe during their rotations, and the 137th Quartermaster Company provided laundry and



Tiefort City road network

shower support throughout the exercise. The first rotation consisted of Soldiers from the 368th Engineer Battalion (Combat) (Heavy), the 961st Engineer Battalion (Combat) (Heavy), the 321st Engineer Battalion (Combat) (Mechanized), the 728th Engineer Detachment, and the 718th Engineer Company (Combat Support Equipment). The second rotation consisted of Soldiers from the 863d Engineer Battalion (Combat) (Heavy), the 841st Engineer Battalion (Combat) (Mechanized), and the 285th Engineer Company (Combat Support Equipment).

Two 48- by 60-foot pre-engineered buildings, one 24- by 36-foot pre-engineered building, ten concrete masonry units, and thirteen skid-mounted modular wooden buildings were



Quarry site where gravel is produced for NTC construction projects



Capital City well site

completed. More than 2.85 miles of slum, residential, and interstate road network with drainage ditches were constructed, providing city infrastructure. One of the more challenging projects was upgrading a well stem drilled the previous year: a 16- by 70-foot discharge pad with 10-foot approach ramps was constructed, plumbing was installed, a 12,000-gallon storage tank and perimeter fence was erected, and an electrical box with service provided by a 10-kilowatt generator was installed. The 319th returned to NTC and produced gravel for the construction projects. With help from the 368th, 863d, and 841st, more than 18,000 tons of gravel were produced.

Tactical Training

In addition to the construction projects, Soldiers were able to receive tactical training on many of their mission-essential tasks. Operating out of an FOB environment, Soldiers had to cover entry control points, establish base camp operations, prepare quick-reaction forces, and conduct perimeter guard duties. One of the tougher jobs in the FOB was that of the mayor, who had the overall responsibility of security and all quality-of-life issues. Soldiers practiced many tactics, techniques, and procedures throughout the exercise and performed tasks such as jobsite security, improvised explosive device (IED) detection, IED reaction, route clearance, convoy procedures, convoy safety briefs, trip tickets, risk management, reacting to contact, operating a net control station, operating a retransmission site, reporting procedures, and warrior task training. Units were able to take advantage of M16, M203, M249, M9, M2, MK19, shotgun, mine-clearing line charge (MICLIC), and demolition ranges. Currently, an average of one unit each year fires on the convoy live-fire range. Units received feedback from observer-controller/trainers (OC/Ts) from the 2-310th Training Support Battalion and 1-347th Training Support Battalion. The OC/Ts worked

closely with the Operations Group Divisional Tactical Operations Center (DTC) and the engineer Sidewinder element on Fort Irwin. All leaders and Soldiers learned valuable lessons during their time at NTC. Training tactically and technically in a desert environment was challenging and realistic, incorporating many of the principles found in Army Field Manual 7-1, *Battle Focused Training*.

Future Exercises

An equipment pool was acquired and established from six different regional readiness commands from all over the United States and is stored for future Operation Sand Castle exercises at a new equipment concentration site in California. Units supplemented additional equipment needs by shipping their home station equipment. Maintenance and logistical operations were successful, overcoming the many challenges presented by the terrain and harsh desert environment.

Participating engineer units are setting up the foundation to improve future training events at the nation's premier training center. The new Tiefert City will support all armed services that conduct training at NTC. Future units will have a bigger, more complex training facility, which will enhance unit training and deployment preparation. Overall, the exercise was a rewarding and educational experience that will benefit leaders, Soldiers, and units for many years.



Master Sergeant Knecht is the Reserve Component liaison at the Exercise Support Command at NTC, Fort Irwin, California. Previous assignments include 952d Engineer Company (CSE), Paris, Texas; Detachment 1, 952d Engineer Company, Marshall, Texas; Military District of Washington (MDW) Engineer Company, Fort Belvoir, Virginia; 84th Engineer Battalion, Schofield Barracks, Hawaii; 4th Engineer Battalion, Fort Carson, Colorado; and 44th Engineer Battalion, Camp Nimble, Korea.